

Abstract:

Device for generating a thermal flux with a magneto-caloric material

The present invention concerns a device for generating a thermal flux with a magneto-caloric material, which is non-polluting, effective, reliable, of simple design and simple to use, economical, compact, and can be used both in large-scale industrial installations and for domestic applications. The device (3) for generating thermal flux with a magneto-caloric material comprises two thermal flux generation units (30) arranged side by side and each provided with thermal bodies (31) containing a magneto-caloric element and arranged in line along two rows carried by rectilinear frames (306). The thermal bodies (31) are subjected in alternation to magnetic fields emitted by magnetic mechanism (303) in the shape of a U, positioned in a staggered arrangement on either side of two bars (304) which move in reciprocating rectilinear translation. The thermal bodies (31) have a through-channel containing a heat transfer fluid and connected to one or more heat transfer fluid circuits. In the presence and in the absence of the magnetic field, the temperature of the thermal bodies (31) respectively increases and then falls to a temperature below the initial temperature. The calories and frigories emitted by the thermal bodies (31) are recuperated by the heat transfer fluid and extracted by way of exchangers.